RERC (Battery Energy Storage Systems), 2025 [Draft]

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The RERC notified draft on Battery Energy Storage Systems Regulations, 2025. The main objectives of the proposed regulations are:

Objective: The regulations aim to enable the deployment and utilization of Battery Energy Storage Systems (BESS) as integral components of generation, transmission, and distribution infrastructure, while facilitating their participation in ancillary services and energy markets. They seek to promote cost-effective energy storage solutions that enhance grid stability, support frequency regulation, and enable large-scale integration of renewable energy. The framework also provides regulatory clarity for aggregators and third-party BESS developers, allowing them to participate in electricity markets in a transparent and efficient manner, thereby encouraging private investment and fostering the development of a competitive and flexible energy storage ecosystem.
The document can be accessed here.

CER Opinion

1. **Role of Distributed Energy Resource Aggregator (DERA): In the Draft Clause 2(1)(b)** *"**Aggregator(s)**"* or *"**Distributed Energy Resources Aggregator or DERA**" means an entity registered/appointed with/by the distribution licensee to provide aggregation of one or more services like demand response services, Distributed Generation, Energy Storage, etc., within a license area."*

   The expression "registered/appointed with/by the distribution licensee" introduces ambiguity in the qualification process for Aggregator(s)/ DERA. Registration and appointment are two distinct regulatory actions with different legal implications, procedural requirements, and oversight mechanisms. The draft regulation needs to provide clarity as to whether an aggregator needs to be formally registered, or how would the 'appointment' mechanism work?

   The regulation should provide clear guidelines including eligibility and process for registration / appointment of Aggregator(s)/ DERA to ensure regulatory certainty and enforceability.

2. **Modified in Terminology: In the Draft Clause 2(1)(c)** "***Ancillary Service (AS) capacity obligation**" is the capacity signaled for dispatch by the Nodal Agency under SRAS or the capacity procured by the Nodal Agency under TRAS"*. (emphasis added)

   It is recommended to define the term "Ancillary Services Capacity Obligation" as "SRAS Capacity Obligation" to ensure alignment and consistency with other regulatory documents particularly those issued by the CERC. Adopting a standardized definition will help avoid any interpretational ambiguities and promote regulatory coherence.

3. **Definition of Banking: In the Draft Clause 2(1)(d)** Banking*" means a facility through which the unutilized portion of energy from any of the Green Energy Sources during a billing month is kept in a separate account and treated in accordance with the conditions laid down in the relevant Regulations issued by the Commission.".*

   The draft currently restricts the definition of banking to green energy only. Considering Rajasthan's existing regulations[1] encompass banking for all types of energy, it would be prudent to specifically define "Green Energy Banking" under the new framework. This approach will ensure clarity while maintaining consistency with prevailing legal provisions.

4. **Technology Agnostic Energy Storage System: In the Draft Clause 2(1)(f)** *Battery Energy Storage System Developer" or "BESSD" or "Developer" shall mean the entity owning/operating the BESS facility for the supply of power under this regulation".*

   Given the intention to cover diverse storage technologies, replacing the terms "Battery Energy Storage System (BESS)" and "Battery Storage Developer (BSD)" with "Energy Storage System (ESS)" and "Energy Storage System Developer (ESSD)" throughout the document is advisable. This substitution would support a technology-agnostic regulatory framework and thus promote competition across technologies leading to cost effective solutions. The proposed definition is thus also not aligned with objective (Clause 3. (c)), which highlights cost effective energy storage system.

5. **Standalone Operation and Market Participation: In the Draft Clause 2(1)(i)** *Standalone BESS" means a BESS operating independently as a merchant unit that has the capability to engage in energy or capacity trading in power markets or AS".*

   Considering the technical and economic complexities associated with capacity trading by standalone BESS/ESS, it is suggested to revise the language to "participate in capacity trading and ancillary services through power exchanges or bilateral agreements." This wording would reflect current market context and also enable emerging opportunities in future..

6. **Un-Requisitioned Surplus (URS): In the Draft Clause 2(1)(n)** *Un-Requisitioned Surplus" or "URS" means the capacity in a generating station that has not been requisitioned and is available for dispatch, and is computed as the difference between the declared capacity or* ***maximum possible generation****, as the case may be, of the generating station and its total schedule".* (emphasis added)

   The URS should be calculated as the difference between the declared capacity and its total schedule. Insertion of 'maximum possible generation' may introduce additional legal/technical complexities. It is also important to clarify that URS provisions apply only to conventional generators under Power Purchase Agreements (PPAs) and not to renewable energy generators.

[1] RERC (Terms and Conditions for Green Energy Open Access) Regulations,2025, www.rerc.rajasthan.gov.in/rerc-user-files/regulations

7. **Terminology for Generators: In the Draft Clause 4.1** "*BESS may be developed and owned by Distribution Licensees, Transmission Licensees,* ***GENCOS, Independent Power Producers (IPPs),*** *Consumers, SLDC, Standalone BESS, Renewable Energy Developers, Aggregators, or any other third-party investors".* (emphasis added)

   The legal and regulatory framework in the power sector defines generation as one of the components. Terms such as "GENCO" and "IPP" should be replaced with standard terms like "generating station" or "generating plant" as applicable to align with legally defined terminology under the Electricity Act.

8. **Business Model Reference:** The draft mentions the term "business model" without elaborating the same. Including examples or referencing established business models under CEA/CERC guidelines would provide stakeholders with much-needed clarity.

9. **Planning Linkages: In the Draft Clause 5.2**. *"The Distribution Licensees and the State Transmission Utility (STU) shall plan the requirement of energy storage capacity within their respective areas of operation, keeping in view the technical considerations, system reliability, and load requirements. Provided that in the process of such planning, both the Distribution Licensees and the STU shall consult the State Load Dispatch Centre (SLDC). Provided further that the* ***proposed storage plan shall be submitted for approval to the Commission along with ARR/Investment Plan****."*. (emphasis added)

   With growing RE share, storage technology needs to be deployed to enhance system reliability. This is an integral part of a Resource Adequacy Plans (RAP) exercise. To ensure comprehensive planning, a clear linkage to Resource Adequacy Plans (RAP) should also be provided for in addition to the approvals under the Aggregate Revenue Requirement (ARR)/ investment plans.

10. **Role of Distributed Energy Resource Aggregator (DERA):** The draft should explicitly recognize the role of Distributed Energy Resource Aggregators (DERA) in standalone ESS operations to support integration of distributed storage resources.
11. **Vehicle-to-Grid (V2G) Integration:** Clarification regarding the regulatory treatment and participation of electric vehicle (EV)-based storage systems under Vehicle-to-Grid (V2G) models within the ESS framework is necessary to facilitate innovative solutions and grid services.
12. **Legal Status of Storage Assets:** As per MoP notification, an Energy Storage System (ESS), except for standalone systems, would have a legal status based on it being part of generation, transmission, distribution or system operation. An ESS operates as a 'load' or as a 'generator'. There is a need to clearly define the legal and regulatory status of standalone Energy Storage Systems during their operation as load when charging and as generators when discharging. This clarity will assist in the due application of the relevant regulations.
13. **Undefined Term - Energy Storage Element:** The term "energy storage element" remains undefined. Providing a precise definition or replacing it with a standardized term will enhance clarity.


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